REMARKS

I. Claim Rejections - 35 USC § 102

Requirements for *Prima Facie* Anticipation

A general definition of *prima facie* unpatentability is provided at 37 C.F.R. §1.56(b)(2)(ii):

> A *prima facie* case of unpatentability is established when the information *compels a conclusion* that a claim is unpatentable under the preponderance of evidence, burden-of-proof standard, giving each term in the claim its broadest reasonable construction consistent with the specification, and before any consideration is given to evidence which may be submitted in an attempt to establish a contrary conclusion of patentability. (*emphasis added*)

"Anticipation requires the disclosure in a single prior art reference of each element of the claim under consideration." *W.L. Gore & Associates v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303, 313 (Fed. Cir. 1983) (citing *Soundscriber Corp. v. United States*, 360 F.2d 954, 960, 148 USPQ 298, 301 (Ct. Cl.), *adopted*, 149 USPQ 640 (Ct. Cl. 1966)), *cert. denied*, 469 U.S. 851 (1984). Thus, to anticipate the applicants' claims, the reference cited by the Examiner must disclose each element recited therein. "There must be no difference between the claimed invention and the reference disclosure, as viewed by a person of ordinary skill in the field of the invention." *Scripps Clinic & Research Foundation v. Genentech, Inc.*, 927 F.2d 1565, 18 USPQ 2d 1001, 1010 (Fed. Cir. 1991).

To overcome the anticipation rejection, the applicants need only demonstrate that not all elements of a *prima facie* case of anticipation have been met, *i.e.*, show that the reference cited by the Examiner fails to disclose every element in each of the applicants' claims. "If the examination at the initial state does not produce a prima face case of unpatentability, then without more the applicant is entitled to

grant of the patent." *In re Oetiker*, 977 F.2d 1443, 24 USPQ 2d 1443, 1444 (Fed. Cir. 1992).

Ozeki et al.

The Examiner rejected claims 1, 2, 7, 11 and 12 under 35 U.S.C. §102(b) as being anticipated by Ozeki et al. (U.S. Patent No. 6,317,242), hereinafter referred to as "Ozeki".

Regarding claims 1 and 11, the Examiner argued that Ozeki discloses (citing FIG. 1 of Ozeki) a method, comprising: associating at least one light source (42a) and at least one light sensor (42b) with at least one component (40) of a data processing system; at least one other light source (42a) and at least one other light sensor (42b) associated with at least one other component (40) of said data processing system; and wherein data is communicated directly between said at least one component and said at least one other component of said data-processing system; and wherein data is communicated directly between said at least one component and said at least one other component of said data-processing system by transmitting light with one or less turns at a reflection point from said at least one light source to said at least one other component of said data processing system by transmitting light from said at least one light source to said at least one other light sensor or one or less turns at a reflection point from said at least one other light source to said at least one sensor. (The Examiner argued that FIG. 1 shows the transmission of signal with one or less turns from the emitters to the receivers.)

The Applicant respectfully disagrees with this assessment and notes that claims 1 and 11 have been amended to include the further limitation of wherein the light is transmitted form source to sensor *directly through one or less element wherein the element is a mirror*. The Applicant discloses and claims an optical transmission system wherein the light is transmitted without an optical bus, or any other component other than a mirror between the light source and the light sensor.

As argued in the previous response, Ozeki does not disclose that the light transmission is direct from a light source to a light sensor.

Ozeki discloses an optical bus (see FIG. 1 of Ozeki) between a light source and a light sensor. The transmission of light into an optical bus is not a direct transmission from source to sensor. Ozeki (col. 5, line 58 through col. 6, line 15) discloses that the optical bus includes input/output portions (reference item 21) and light input nodes A, B, C, D, E and F. The transmission of light *through* this bus does not constitute a *direct* transmission of light as in the Applicant's invention. The light is transmitted into the optical bus utilizing *light input and output portions* and light *input nodes*. The light transmission is not a *direct* transmission. The Examiner has merely stated that Ozeki discloses a direct communication without any citation in Ozeki for how this is accomplished. Ozeki discloses an optical bus *between* the source and sensor as disclosed in col. 4, lines 31-55 of Ozeki as follows:

> "In carrying out the invention and according to one aspect thereof, there is provided a first optical bus system comprising: an optical bus system, comprising: an optical bus having a plurality of signal light input/output portions disposed along two opposed edges of said optical bus to input and output signal light, wherein the signal light input from said signal light input/output portions disposed at one of said edges thereof is transmitted toward the other edge thereof and is output from said signal light input/output portions disposed at the other edge thereof; and a plurality of light emitting/receiving circuits provided corresponding to said plurality of signal light input/output portions, wherein each of the light emitting/receiving circuit has a signal light emitting unit which generates the signal light entered into said optical bus through the corresponding signal light input/output portion and a signal light receiving unit which receives the signal light output from the corresponding signal light input/output portion to obtain a signal corresponding to the input signal at least one of the light receiving/emitting circuits corresponding to the plurality of signal light input/output portions on each of the two edges of the optical bus includes a repeater that causes the corresponding signal light sending unit to send out the signal light received by the corresponding signal light receiving unit."

This paragraph in Ozeki discloses that the invention of Ozeki *is* the optical bus itself; the very component that the Applicant's invention does *not* include and specifically claims as not included by claiming the light is transmitted *directly* from

source to sensor. The Applicant's current amendment to claims 1 and 11 further clarifies this distinction of the light transmitted directly through one or less elements wherein the one element is a mirror. The limitation of one or less element wherein said one or less element is a mirror therefore includes the disclosed embodiment of a light based transmission system without a mirror or any other component and also an embodiment with one mirror to align the light beam. Ozeki does not disclose this claim limitation.

Therefore, Ozeki fails in the aforementioned *prima facie* anticipation test as Ozeki does not disclose each and every limitation of the Applicant's claims 1 and 11. Based on the foregoing, the Applicant respectfully requests that the 35 U.S.C. §102(b) rejections of claims 1 and 11 based on the Ozeki reference be withdrawn.

Regarding claims 2 and 12, the Examiner argued that Ozeki discloses (citing FIG. 1) at least one light path patch established between said at least one component (1a) and said at least one other component (1b) of said data-processing system in order to communicate data by light among said at least one light source (2a), said at least one sensor (7a), said at least one other light source (2b) and said at leas tone other sensor (7b).

Regarding claim 7, the Examiner argued that Ozeki discloses (citing FIG. 1) aligning said at leas tone component directly opposite said at least one other component in order to form at least one direct light path between said at least one light source (42a) and said at least one other sensor (42b) and said at least one other light source and said at least one light sensor.

The Applicant respectfully disagrees with this assessment and notes that the argument presented above against the rejections of claims 1 and 11 applies equally against the rejections of claims 2, 7 and 12, as these claims are dependent upon either claim 1 or claim 11. As argued above, Ozeki does not disclose a system wherein the light is transmitted directly from source to sensor, as in the Applicant's claims.

Ozeki, therefore, fails in the aforementioned *prima facie* anticipation test as Ozeki does not disclose each and every limitation of the Applicant's claims. Based on the foregoing, the Applicant respectfully requests that the 35 U.S.C. §102(b) rejections of claims 2, 7 and 12 based on the Ozeki reference be withdrawn.

Orino

The Examiner rejected claims 1, 5, 6, 8, 9, 11, 12, 15, 16 and 18 under 35 U.S.C. §102(b) as being anticipated by Orino (U.S. Patent No. 5,530,557).

Regarding claims 1 and 11, the Examiner argued that Orino discloses (citing FIG. 1 of Orino) a method comprising: associating at least one light source (2a) and at least one light sensor (7a) with at least one component (1a) of a data processing system; at least one other light source (2b) and at least one other light sensor (1b) associated with at least one other component (1b) of said data processing system; and wherein data is communicated directly between said at least one component and said at least one other component of said data-processing system by transmitting light with one or less turns (1 turn) at a reflection point from said at least one light source to said at least one other component of said data processing system by transmitting light from said at least one light source (2a) to said at least one other light sensor (7b) or one or less turns at a reflection point from said at least one other light source (2b) to said at least one sensor (7a).

The Applicant respectfully disagrees with this assessment and notes that claim 1 and 11 both include the limitation that the light source and light sensor are components of a *data-processing system*. Another term for a "data-processing system" is a "computer". A data-processing system includes the computer hardware and the software of a computer system. This is disclosed in the Applicant's paragraph [0014] - [0029].

The Applicant's invention is a light-based communication system within a data-processing system. The Applicant's Background section in the specification discusses the need for a light-based system in a data-processing system to

decrease the usage of cables and wires in data-processing systems such as personal computers. The data-processing system is specifically claimed as a limitation in all of the Applicant's independent claims.

Orino does not disclose that the two way optical communications apparatus is a component of a data-processing system or a computer system. Additionally, Orino does not disclose that that the light is transmitted through one or less element from source to sensor. Orino's FIG. 1 discloses that the light proceeds through two quarter wave plates (5a and 5b) and through two polarization beam splitters (4a and 4b) as it is transmitted from laser diode (2a) to light receiving element (7b). Orino also does not disclose the utilization of a mirror, but utilizes polarization beam splitters (4a and 4b) with a "joining surface" (4aa and 4bb).

Therefore Orino fails in the aforementioned prima facie anticipation test as Orino fails to disclose each and every limitation of the Applicant's claims 1 and 11. Orino fails to disclose 1) a data-processing system, 2) the light is transmitted directly through one or less element, or 3) that the one element is a mirror.

Based on the foregoing, the Applicant respectfully requests that the 35 U.S.C. §102(b) rejections of claims 1 and 11 based on the Orino reference be withdrawn.

Regarding claims 2 and 12, the Examiner argued that Orino discloses at least one light path patch established between said at least one component and said at least one other component of said data-processing system in order to communicate data by light among said at least one light source (2a), said at least one sensor (7a), said at least one other light source (2b) and said at least one other sensor (7b).

Regarding claims 5 and 15, the Examiner argued that Orino discloses providing at least one mirror (4aa) to guide light emitted from said at least one light source to said at least one other light sensor or light emitted from said at least one other light source to said at least one light sensor.

Regarding claim 6, the Examiner argued that Orino discloses establishing at least one light path patch between said at least one component (1a) and said at least one other component (1b) of said data-processing system in order to communicate data by light among said at least one light source (2a), said at least one sensor (7a), said at least one other light source (2b) and said at least one other sensor (7b); and locating at least one mirror (4aa) at an end of said at least one light path in order to guide light emitted from said at least one light path in order to guide light emitted from said at least one light source to said at least one other light sensor or light emitted from said at least one other light source to said at least one light sensor.

Regarding claim 8, the Examiner argued that Orino discloses aligning said at least one component (1a) perpendicular to said at least one other component in order to form a perpendicular light path between said at least one light source and said at least one other sensor (7b) and said at least one other light source (2b) and said at least one light sensor (7a), wherein said perpendicular light path is guided by at least one mirror (4aa).

Regarding claim 9, the Examiner argued that Orino discloses (citing FIG. 1) said at least one mirror (4aa) is located at a 45 degree angle to said at least one component and said at least one other component of said data-processing system.

Regarding claim 16, Orino discloses (citing FIG. 1) a system comprising: at least one light source (2a) and at least one light sensor (7a) associated with at least one component of a data-processing system; at least one other light source (2b) and at least one other light sensor (2b) associated with at least one other component of said data-processing system, wherein data is communicated between said at least one component (1a) and said at least one other component (1b) of said data processing system by transmitting light from said at least one light source (2a) to said at least one other light sensor (7b) or from said at least one other light source to said at least one sensor (7a); at least one light path established between said at least one component of said data-processing system in order to

communicate data by light among said at least one light source, said at least one sensor, said at least one other light source and said at least one other sensor; and at least one mirror (4aa) located at the end of said at least one light path in order to guide light emitted directly from said at least one light source to said at least one mirror and thence directly to said at least one other light sensor and light emitted directly from said at least one other light source to said at least one mirror (4aa) and thence directly to said at least one light sensor.

Regarding claim 18, the Examiner argued that Orino discloses at least one component located perpendicular to said at least one other component in order to form a perpendicular light path between said at least one light source and said at least one other sensor and said at least one other light source and said at least one light sensor, wherein said perpendicular light path is guided by said at least one mirror (4aa).

The Applicant respectfully disagrees with these assessments and notes that the argument presented above against the rejection of claims 1 and 11 over Orino apply equally against the rejections of claims 5, 6, 8, 9, 12, 15 as these claims are dependent upon either claim 1 or claim 11. As argued above, Orino does not disclose each and every limitation of the Applicant's independent claims.

The argument presented above also applies equally against the rejections of claims 16 and 18 as independent claim 16 also includes the limitations of a data-processing system and a light path established from the source to the sensor wherein the light is transmitted directly from source to sensor with a mirror. As argued above, Orino does not disclose these limitations and therefore, in regard to claims 5, 6, 9, 12, 15, 16 and 18 fails in the aforementioned anticipation test as each and every limitation of the Applicant's claims are not disclosed.

Based on the foregoing, the Applicant respectfully requests that the 35 U.S.C. §102(b) rejections of claims 5, 6, 9, 12, 15, 16 and 18 based on the Orino reference be withdrawn.

II. Claim Rejections - 35 USC § 103

Requirements for Prima Facie Obviousness

The obligation of the examiner to go forward and produce reasoning and evidence in support of obviousness is clearly defined at M.P.E.P. §2142:

> "The examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. If the examiner does not produce a *prima facie* case, the applicant is under no obligation to submit evidence of nonobviousness."

The U.S. Supreme Court ruling of April 30, 2007 (*KSR Int'l v. Teleflex Inc.*) states:

> "The TSM test captures a helpful insight: A patent composed of several elements is not proved obvious merely by demonstrating that each element was, independently, known in the prior art. Although common sense directs caution as to a patent application claiming as innovation the combination of two known devices according to their established functions, it can be important to identify a reason that would have prompted a person of ordinary skill in the art to combine the elements as the new invention does."
>
> "To facilitate review, this analysis should be made explicit."

The U.S. Supreme Court ruling states that it is important to identify a *reason* that would have prompted a person to combine the elements and to make that analysis *explicit*. MPEP §2143 sets out the further basic criteria to establish a *prima facie* case of obviousness:

1. a reasonable expectation of success; and

2. the teaching or suggestion of all the claim limitations by the prior art reference (or references when combined).

It follows that in the absence of such a *prima facie* showing of obviousness by the Examiner (assuming there are no objections or other grounds for rejection) and of a *prima facie* showing by the Examiner of a *reason* to combine the references, an applicant is entitled to grant of a patent. Thus, in order to support an obviousness

rejection, the Examiner is obliged to produce evidence compelling a conclusion that the basic criterion has been met.

Orino in view of Kim

The Examiner rejected claims 3, 4, 13, 14, 19, and 20 under 35 U.S.C. §103(a) as being unpatentable over Orino in view of Kim (U.S. Patent Application Publication No. 2002/0021855).

Regarding claims 3, 13, and 19, the Examiner argued that Orino discloses the invention set forth above. The Examiner admitted that Orino does not teach the use of LED. The Examiner argued that Kim discloses the use of LED (citing col. 4, lines 50-55 of Kim). The Examiner argued that it is well known to use LED as a light source. The Examiner argued that it would have been obvious to a person of ordinary skill in the art at the time of the invention to use LED as a light source to improve the reliability of the light source.

Regarding claims 4, 13, 14, and 20, the Examiner argued that Orino discloses the invention set forth above. The Examiner admitted that Orino does not disclose the use of VCSEL. The Examiner argued that Kim discloses the use of VCSEL (citing col. 4, lines 55-60 of Kim). The Examiner argued that it is well known to use VCSEL. The Examiner argued that it would have been obvious to a person of ordinary skill in the art at the time of the invention to use VCSEL to increase the amount of signal to be sent within a given amount of time.

The Applicant respectfully disagrees with these assessments and notes that the arguments presented above against the rejections of claims 1, 11 and 16 over Orino apply equally against the rejections of claims 3, 4, 13, 14 and 20 as these claims are dependent upon claims 1, 11 or 16. As Orino does not disclose the limitations of the independent claims 1, 11 and 16, the combination of the Orino and Kim references fails to teach each and every limitation of the Applicant's claims 3, 4, 13, 14 and 20.

As argued above, Orino fails to disclose 1) a data-processing system, 2) the light is transmitted directly through one or less element, or 3) that the one element is a mirror. Additionally, the U.S. Supreme Court has ruled that it is important to identify a *reason* one of ordinary skill in the art would combine the references and the Examiner is obliged to produce evidence compelling a conclusion that the basic criterion has been met. The Examiner has merely stated that it is well known to use LED/VCSEL as a light source and it would have been obvious to one of ordinary skill in the art to use the LED/VCSEL without providing *any* evidence of such a conclusion.

Therefore, the Applicant submits that Orino in view of Kim fails in the aforementioned *prima facie* obviousness test as each and every limitation of the Applicant's claims are not disclosed in the combination of Orino and Kim. Furthermore, the Examiner has failed to produce any evidence to show that the use of a LED or a VCSEL in the invention would have been obvious to one skilled in the art and has failed to produce any evidence that there would have been a reasonable expectation of success in the utilization of a LED or a VCSEL.

Based on the foregoing, the Applicant respectfully requests that the 35 U.S.C. §103(a) rejections of claims 3, 4, 13, 14, 19, and 20 based on the Orino and Kim references be withdrawn.

Orino in view of Takahara

The Examiner rejected claim 10 under 35 U.S.C. §103(a) as being unpatentable over Orino in view of Takahara (U.S. Patent No. 5,394,259).

Regarding claim 10, the Examiner argued that Orino discloses the invention set forth above. The Examiner argued that Takahara discloses the use of IR light in modulation (citing abstract of Takahara). The Examiner argued that it is well known to use IR light for data transmission. The Examiner argued that it would have been obvious to a person of ordinary skill in the art at the time of the invention to use IR

light to transmit a signal to eliminate the blinking light so the device won't be a distraction.

The Applicant respectfully disagrees with this assessment and notes that the arguments presented above against the rejections of claims 1, 11 and 16 over Orino apply equally against the rejection of claim 10, as claim 10 is dependent upon claim 1. As Orino does not disclose the all of the limitations of the independent claim 1, the combination of the Orino and Takahara references fails to teach each and every limitation of the Applicant's claim 10.

As argued above, Orino fails to disclose 1) a data-processing system, 2) the light is transmitted directly through one or less element, or 3) that the one element is a mirror. Additionally, the U.S. Supreme Court has ruled that it is important to identify a *reason* one of ordinary skill in the art would combine the references and the Examiner is obliged to produce evidence compelling a conclusion that the basic criterion has been met. The Examiner has merely stated that it is well known to use IR light as a light source and it would have been obvious to one of ordinary skill in the art to use the IR without providing *any* evidence of such a conclusion.

Therefore, the Applicant submits that Orino in view of Takahara fails in the aforementioned *prima facie* obviousness test as each and every limitation of the Applicant's claims are not disclosed in the combination of Orino and Takahara. Furthermore, the Examiner has failed to produce any evidence to show that the use of IR in the invention would have been obvious to one skilled in the art and has failed to produce any evidence that there would have been a reasonable expectation of success in the utilization of IR light.

Based on the foregoing, the Applicant respectfully requests that the 35 U.S.C. §103(a) rejection of claim 10 based on the Orino and Takahara references be withdrawn.

Orino in view of Ozeki et al.

The Examiner rejected claim 17 under 35 U.S.C. §103(a) as being unpatentable over Orino in view of Ozeki.

Regarding claim 17, the Examiner argued that Orino discloses the invention set forth above. The Examiner admitted that Orino does not disclose the use of different wavelengths. The Examiner argued that Ozeki discloses the use of a light source with different wavelengths in an optical communication device (citing col. 8, lines 6-30 of Ozeki). The Examiner argued that it is well known to use a light source with different wavelengths. The Examiner argued that it would have been obvious to a person of ordinary skill in the art at the time of the invention to use sources with different wavelengths to eliminate interference of the signal.

The Applicant respectfully disagrees with this assessment and notes that the arguments presented above against the rejections of claim 16 over Orino apply equally against the rejection of claim 17, as claim 17 is dependent upon claim 16. As Orino does not disclose the all of the limitations of the independent claim 16, the combination of the Orino and Ozeki references fails to teach each and every limitation of the Applicant's claim 17.

As argued above, Orino fails to disclose 1) a data-processing system, 2) the light is transmitted *directly* through one or less element, or 3) that the one element is a *mirror*. Additionally, the U.S. Supreme Court has ruled that it is important to identify a *reason* one of ordinary skill in the art would combine the references and the Examiner is obliged to produce evidence compelling a conclusion that the basic criterion has been met. The Examiner has merely stated that it is well known to use a light source with different wavelengths and it would have been obvious to one of ordinary skill in the art to use a light source with different wavelengths without providing *any* evidence of such a conclusion.

Therefore, the Applicant submits that Orino in view of Ozeki fails in the aforementioned *prima facie* obviousness test as each and every limitation of the Applicant's claims are not disclosed in the combination of Orino and Ozeki. Furthermore, the Examiner has failed to produce any evidence to show that the use

of a light with different wavelengths in the invention would have been obvious to one skilled in the art and has failed to produce any evidence that there would have been a reasonable expectation of success in the utilization of a light with different wavelengths.

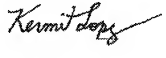
Based on the foregoing, the Applicant respectfully requests that the 35 U.S.C. §103(a) rejection of claim 17 based on the Orino and Ozeki references be withdrawn.

III. Conclusion

In view of the foregoing discussion, the Applicant has responded to each and every rejection of the Official Action. The Applicant has clarified the structural distinctions of the present invention. Also, the amendments provided herein are presented for clarification purposes only. Applicant respectfully requests the withdrawal of the rejections under 35 U.S.C. §102 and §103 based on the preceding remarks. Reconsideration and allowance of Applicant's application is also respectfully solicited. A Request for Continued Examination (RCE) under 37 CFR 1.114 is also submitted herewith, including the RCE fee of $790.

Should there be any outstanding matters that need to be resolved, the Examiner is respectfully requested to contact the undersigned representative to conduct an interview in an effort to expedite prosecution in connection with the present application.

Respectfully submitted,



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